

Artifact Seen in Kidney-Transplant Patient Prior to Injection

Pamela L. Clay

UNC Hospital, Chapel Hill, North Carolina

Renal transplants from both living relatives and cadavers have a very high success rate. However, there is a high possibility of complication after surgery. Therefore, it is necessary to perform a baseline renogram within 24 hr after transplantation. This is a case report indicating one patient artifact that may be encountered when imaging renal transplant patients.

A 37-yr-old white male was admitted with chronic renal failure. The patient had suffered from kidney failure for five years. After a cadaver renal transplant to his left side, the patient was brought to the nuclear medicine department for a renogram to evaluate the transplanted kidney's function.

MATERIALS AND METHODS

Study:	Technetium-99m (^{99m}Tc) DTPA and iodine-131 (^{131}I) orthoiodohippurate (OIH) renal transplant scintigraphy
Dose:	10 mCi ^{99m}Tc -DTPA and 75 μCi [^{131}I]OIH
Collimator:	Medium energy
Gamma Camera:	Large field of view
Images:	30 five-sec dynamic images, 4 five-min static images, and 120-sec dynamic pre-background image.

ARTIFACT

Prior to any radionuclide injection, radioactivity from some unknown source appeared on the persistence scope in the area of the transplanted kidney. The technologist checked first for patient and/or camera contamination. The patient had no record of any previous nuclear medicine procedures.

It was later determined that the donor kidney was the source

of the activity. The donor had undergone a ^{99m}Tc glucoheptonate brain death study approximately 36 hr prior to the renogram. The residual activity in the kidney was the source of the image that appeared on the persistence scope (Fig. 1).

Because the camera was peaked for ^{99m}Tc , the activity was detected. However, if the camera had not been peaked for ^{99m}Tc , the activity would not have appeared and the results of the renogram could have been compromised.

It is important to obtain a background image prior to injecting the patient with any radionuclide. In this case, there was some activity present, so the background counts were subtracted from the final curve.

INTERPRETATION

The patient showed normal renal perfusion on the first five-min [^{131}I]OIH image (Fig. 2). The twenty-min renogram curve also demonstrated normal kidney function (Fig. 3).

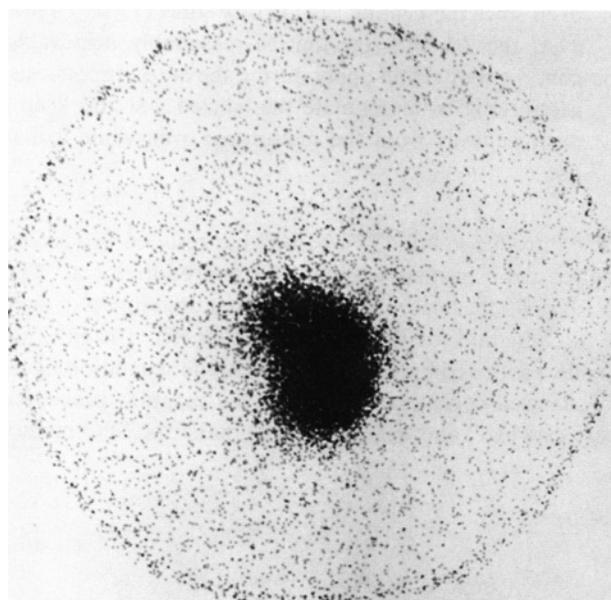


FIG. 1. Static image of unknown artifact. Image was taken with the image formatter at highly increased intensity due to the lack of counts.

For reprints contact: Pamela L. Clay, RT(N), CNMT, Department of Nuclear Medicine, UNC Hospital, Inc., Manning Drive, Chapel Hill, NC 27514.

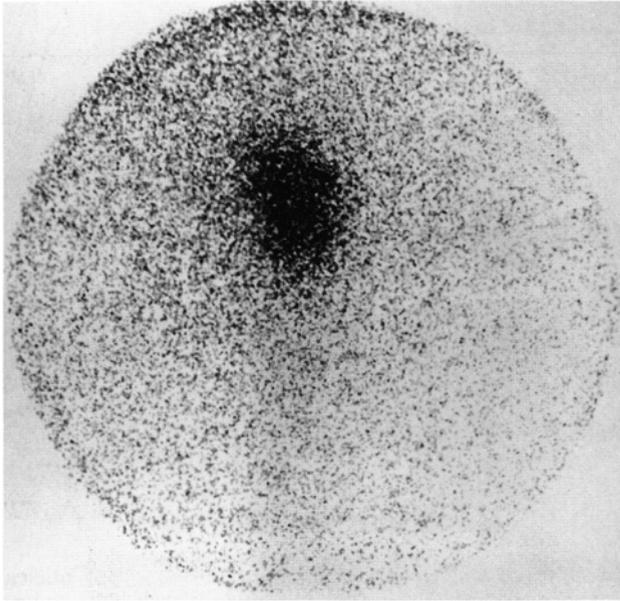


FIG. 2. Five-min static image of kidney using $[^{131}\text{I}]\text{OIH}$ shows normal perfusion.

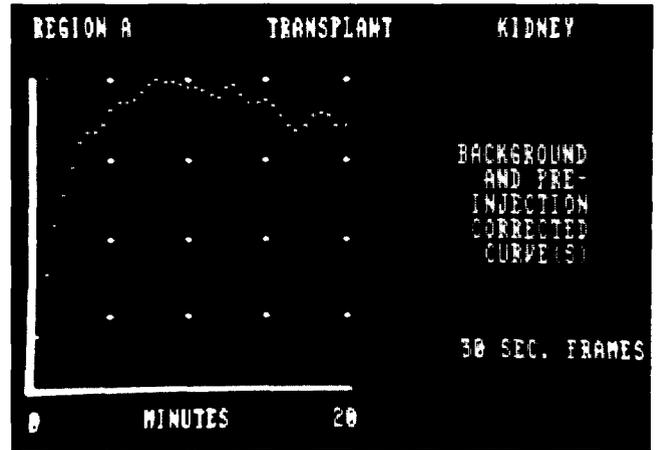


FIG. 3. Twenty-min renogram curve showing normal kidney activity.

ACKNOWLEDGMENT

The author thanks Mr. Eric Juda, CNMT for his assistance.